

# Technical Education at the Undergraduate Level: an Important Component of Modern Vocational Education System in China

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**Abstract.** It is mentioned in the Guidelines of the National Program for Medium- and Long-Term Educational Reform and Development(2010-2020) that modern vocational education system should be set up in China before 2020. But the requirement is limited in the articulation between secondary vocational education and higher vocational education. The paper firstly analyzes why the vocational education at the undergraduate level, even the graduate level should be developed. Then on the basis of the situation of secondary vocational education and higher vocational education, the experience of technical education at the undergraduate level, and its potential to graduate education, the paper concludes that technical education at the undergraduate level is the carrier of vocational education at the undergraduate level.

**Keywords:** Technical Education, Vocational Education, Undergraduate Level, Modern Vocational Education System

## 1. The Background

It is mentioned in the Guidelines of the National Program for Medium- and Long-Term Educational Reform and Development(2010-2020) that modern vocational education system should be set up before 2020, which would adapt the style of economic development and the need of industrial structure adjustment, embody the ideal of life-long education, and the coordinated growth of secondary vocational education and higher vocational education so as to meet the need of the masses for accepting vocational education. Mr. Lu Xi, China's vice secretary of Minister of Education, ever said constructing the modern vocational education system is an important strategy of the future 10-year vocational education development in China. So we can see modern vocational system has been the strategic key aim of China's vocational education development.

Modern vocational education system should include not only the articulation between secondary vocational education and higher vocational education, but also the vocational education at the undergraduate level, even the graduate level. But in China, vocational education at undergraduate level is a great taboo, which is often related to the upgrade from junior college to university. So just because of this, authorities of education departments require all National Demonstrative Higher Vocational Schools must not upgrade from junior college to university before 2020. In the beginning of 2011, Ministry of Education adjusted the schools administration system, that is to incorporate the Bureau of Higher Vocation Education and Junior College Education and the Bureau of Further Education into the Bureau of Vocational Education and Adult Education. But

The administration responsibility of a mass of applied undergraduate colleges are not adjusted. From this, it seems that education authorities do not think explicitly over vocational education at the undergraduate level, and get it arranged well. In fact, vocational education at the undergraduate level has great significance for us.

## 2. The reasons for developing vocational education at the undergraduate level

### 2.1. The need for improving modern education system with Chinese characteristics

Improving modern education system with Chinese characteristics is one of most important guiding ideologies of the Guidelines of the National Program for Medium- and Long-Term Educational Reform and Development(2010-2020). From the educational levels, the modern education system with Chinese characteristics includes preschool education, primary school education, junior high school education, senior high school education, junior college education, undergraduate education and graduate education. From the

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educational forms, the modern education system with Chinese characteristics includes the education with and without record of formal schooling, and vocational education and general education. So it is a precise educational system with distinct gradations and complete types. But in the system of the Guidelines of the National Program for Medium- and Long-Term Educational Reform and Development(2010—2020), higher education does not refer to higher vocational education, and vocational education does not refer to higher vocational education too. From the view of the current situation, there exists higher vocational education in junior colleges. There is no vocational education at the undergraduate level, much less vocational education of higher level. Therefore, in the view of the need for improving modern education system with Chinese characteristics, the system is integrated only the vocational education at the undergraduate level and even higher level are set up.

## **2.2. The need for constructing modern vocational education system**

In China's undeveloped area, secondary vocational education is not well developed. In China's economical developed area and cities, there is no vocational education at the undergraduate and higher level which corresponds with advanced technology industry and modern service industry. So it is obvious that the system is not complete. From what we see, many students in junior vocational colleges hope to get the opportunities of studying in university. So if vocational education has no promotion channels, these students will have to join the general university which mainly focuses on disciplinary knowledge system. This will cause the confusion of talents cultivating. And it must be surely a great waste of human resources, economics and material resources.

## **2.3. The need for the transformation of the pattern of economic development and the adjustment of industry structure.**

Nowadays, science and technology change with each passing day. The speed of industry upgrading accelerates. The mode of economic development changes from extensive form to intensive form. Emerging creative industry and modern service industry propose higher-standard demands for workers' personal qualities, which are the technically applied standard and the service skills and technologies so as to improve the EVA (economic value added) of products and services. The final aim is to strengthen the competitiveness of China's economics in the world. So we should enhance workers' quality to a very high level so that China's manpower resources can support the development and utilization of science and technology, and the promotion of products quality.

## **2.4. The need for strengthening the attraction of vocational education**

The history of China's vocational education is relatively long. But it is after the Reform and Openness, especially after 1990s, that vocational education was taken seriously and became an independent conception. So just because of this, the attraction of vocational education is extremely low. A large amount of students do not want to go to vocational education colleges. Many people relate vocational education to lower quality, lower level, lower standard and other debased words like these. But after the more than 20-year vigorous propaganda and support from the authorities, vocational education is gradually accepted by more and more people, and the attraction of it is also improving. Even though, if vocational education is limited under undergraduate level, it will surely weaken students' enthusiasm for studying in vocational education colleges.

## **2.5. vocational education at the undergraduate level exists commonly in other countries**

USA, German and Japan are publicly considered developed country of vocational education. Though the national conditions and education system of these three countries are different, they have many things in common on the experience of vocational education at the undergraduate level. Vocational education at the undergraduate level has tens-year history in developed countries. After the development of these years, the vocational education at the undergraduate level has cultivated large members of technical talents, at the meanwhile, it also promotes the competitiveness and position of their vocational education in the world. That is to say, vocational education at the undergraduate level can not only meet the society's need for technical talents, but can motivate the development of vocational education itself. So vocational education at the undergraduate level play a pretty important role in these countries' economical development and global

competitiveness. In this sense, China should learn from the experiences of these developed countries on vocational education at the undergraduate level.

### **3. The reason for choosing technical education at the undergraduate level as the carrier of vocational education at the undergraduate level**

#### **3.1. what higher vocational colleges mainly carry out is technical education**

In terms of talents types, there is an extensively accepted viewpoint that talents are divided into four types: academic talents, engineer talents, technical talents and skilled talents. Among them, technical talents and skilled talents are cultivated by vocational education. But there are many differences between technical talents and skilled talents. Technical talents are also called industrial art talents or medial talents. They work at the front line or job site. It is only by them that the designs, plans and decisions from engineer talents are changed into physical forms. Technical talents should have some extent theoretical basis. But they do not need to get to the theoretical standard of engineer talents, which pay attention to the practical utilization. Skilled talents are also called operational talents. They also work at the front line or job site. But the main difference between these two types of talents is that skilled talents work by mainly using operational skills.

It is obvious that skilled talents should be mainly cultivated by secondary vocational education, while technical talents are cultivated by higher vocational education. So in this sense, higher vocational education mainly carries out the cultivating of technical talents, which is technical education.

#### **3.2. The historical experience of technical universities**

From the situation of technical universities at the undergraduate level, most of them were founded since 1990s, which are now called Newly Constructed Undergraduate Institutions. These institutions were combined with a few higher vocational colleges. Before their combination, they have formed several distinct characters of employment oriented, which are to cultivate applied talents for the front line of producing, construction, management and service. They made somewhat great contributions to local community and economical construction. Their characteristics of schooling were widely recognized by employers. But after their combination, many newly constructed undergraduate institutions have difficulties with how to orient their development direction. Because they have to compete with elder undergraduate universities by undertake dislocation competition. So many newly constructed undergraduate institutions choose technical education at the undergraduate level as their development direction. Just because of this, most of technical universities at the undergraduate level have the historical experience of vocational education. Then, the traditional inheritance and connection between higher vocational education and technical education at the undergraduate level are pretty smooth and natural. And there will be plenty of common points and bonding points in their communication.

In a conclusion, there are practical foundation and historical accumulation if we make technical education at the undergraduate level as the carrier of vocational education at the undergraduate level.

#### **3.3. The potential to develop graduate education of professional degree**

As we have proposed in the previous content, modern vocational education system should include not only the undergraduate level but also graduate level. Therefore, technical education at the undergraduate level is the main carrier of graduate education of professional degree in the modern vocational education system in the future.

As we know, graduate education of professional degree pays greatly attention to practice. Its cultivating-talent aim is applied talents of high level. They cater directly to social demands. And their occupational orientation is clear. Graduate education of professional degree emphasizes on the practice training which relates to some specific occupations. It requires that the graduates have the qualifications to do some specific occupation after they finish their graduate education of professional degree. The occupational feature permeates the overall process of graduate education of professional degree. So technical universities at the undergraduate level have extreme advantages in cultivating applied talents. From the hardware capacities to instructor faculties, from the program construction to the discipline construction, technical universities are more suitable to carry on graduate education of professional degree. And, many

technical universities have the background of industrial, which is an important condition for graduate education of professional degree.

In consideration of the advantages of technical universities in implementing graduate education of professional degree, technical universities should be chosen as the carrier of applied graduate education. So if modern vocational education system needs to develop from undergraduate level to graduate level, technical universities are the appropriate realization route.

#### **4. Summary and Prospects**

At present, the construction of China's modern vocational education system is lacking of a sally port or induction. The articulation between secondary vocational education and higher vocational education has been discussed for many years in academia. And in practice, the articulation between secondary vocational education and higher vocational education has already existed for years. From these situations, the articulation between secondary vocational education and higher vocational education is not a fangle any more. So the articulation between secondary vocational education and higher vocational education is not suitable to chosen as the sally port of the construction of China's modern vocational education system.

Because of the emphasis from the authorities in national level, the voice of the construction of China's modern vocational education system is pretty loud. But it is lack of a hot sally port or induction. In this situation, we could explore the innovation of education system of technical education at the undergraduate level. In the innovation, technical education at the undergraduate level can naturally link up with higher vocational education. The ascending channel of modern vocational education will open soon. And the technical education at the undergraduate level will surely be the bright spot of modern vocational education.

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